

**Problem statement** Sketch the region  $R$  defined by  $1 \leq x \leq 2$  and  $0 \leq y \leq 1/x^3$ .

a) Find (exactly) the number  $a$  such that the line  $x = a$  divides  $R$  into two parts of equal area.

b) Then find (to 3 places) the number  $b$  such that the line  $y = b$  divides  $R$  into two parts of equal area.